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THE TELEPHONE IN GREAT BRITAIN.¹

THE development of the telephone industry in Great Britain is of interest to economists as a unique illustration of certain phases of the general problem of the relation between the State and private enterprise. Four years after the invention of the telephone a situation had come about in that country which required the Postmaster-General to determine the future relation between the State and the new industry. We now see clearly, in the light of later experience, that he should have either developed the telephone as a branch of the State telegraph monopoly or surrendered the monopoly back to private enterprise. But he was hampered by fiscal difficulties in the telegraph undertaking, and chose neither alternative. When once the mistake was made, it was difficult to rectify. Successive postmaster-generals applied their best thought to the solution of a problem which became more and more complicated, as one after another the attempted solutions proved failures. A year ago a settlement was finally made by choosing one of the alternatives rejected a quarter-century before. Whether or not this choice was the best, British experience does not yet enable us to determine.

I.

The first crude telephone was brought into England in 1876 by Lord Kelvin, then Sir William Thompson,² who

¹ The chief sources of information are: (1) The Reports of the Postmaster-General, hereafter cited as P.M.G. Reports; (2) the Reports of Select Committees of Parliament, with the minutes of evidence taken, in 1884, 1892, 1895, 1898, 1899, 1900, 1903, and 1905, hereafter referred to as Sel. Com., 1884, 1892, etc.; (3) the debates in Parliament, reported in Hansard, and the files of the *Economist*.

² Sel. Com., 1895, testimony of Mr. Lamb, assistant secretary of the post-office, in charge of the Telegraph Department.

had seen Bell's model at the Centennial Exposition at Philadelphia, and was one of the first to perceive its commercial value.¹ In the following year Edison invented an improved transmitter,² and in 1878 Professor Hughes invented the microphone, making the telephone a thoroughly practical means of transmitting speech.³ It was now time for the British Post-office authorities to take an interest in the invention. Acting under the Telegraph Acts passed in 1868 and 1869, they had purchased all the telegraphs in Great Britain, and operated them since 1870 as a monopoly. The telephone was an advance in the art of communication, of which as a certain competitor of the telegraph the Postmaster-General was bound to take notice. If it promised to be commercially practicable, it would seem that he ought to introduce it at once into the State telegraph service, or become liable to the charge of obstructing the progress of the industry. At first, however, he failed to recognize its true value. In 1878, in reply to a question in the House of Commons, he said,⁴ "The use of the telephone by the German telegraphic administration has been brought to my notice; but, from the result of trials that have been made here by officers of the Post-office, it is evident that the instrument is at present unsuitable for the purposes of public telegraphy, and I do not, therefore, propose to introduce it in that branch of the Postal Telegraph Service." The task of introducing the telephone into Great Britain was thus declined by the State, which had every reason for keeping complete control of the industry. It was quickly taken up by private enterprise.

A company was formed in 1878 to work the Bell patents, and in the following year another company was formed

¹ *Boston Electrical Handbook*, 1904, p. 119.

² *Ibid.*, p. 132.

³ *Sel. Com.*, 1905, testimony of Mr. Lamb.

⁴ Hansard, Lord John Manners, Postmaster-General, February 21, 1878.

to work the Edison patents.¹ In the same year, 1879, the Bell Company proposed an alliance with the Post-office² under the terms of which the department would secure instruments at cost, but the offer was refused by a sceptical postmaster-general. No exchange had as yet been established, although the first exchange in America had been constructed at New Haven in January, 1878.³ Nevertheless, the Postmaster-General had already become anxious at the possibility of the future growth of the telephone. Tho unwilling to risk the tax-payers' money in order to introduce the new method of communication into the State telegraph system, he deemed it wise to take measures to prevent the infant telephone industry from getting beyond his control. By the Telegraph Act of 1869, granting the monopoly to the Post-office, the term telegraph was declared to mean, not only a "wire or wires used for the purpose of telegraphic communication," which had been a sufficient definition while the industry was under private control, but, in addition, "any apparatus for transmitting messages or other communications by means of electric signals." The Postmaster-General feared this definition might not be broad enough to include the telephone, so he inserted a clause in a bill he was then (1878) introducing into Parliament,⁴ which he intended should bring the new invention under his power. This clause declared the word "telegraph" should include in its meaning "any apparatus for the transmission of messages by the aid of electricity, magnetism, or any like agency." This clause, which would have brought the telephone, invented in 1876, within the telegraph monopoly conferred in 1869, passed the Lords, but was stricken out by the Commons.⁵ Apparently, the Commons

¹ Sel. Com., 1895, testimony of Mr. Lamb.

² *Ibid.*

³ *Boston Electrical Handbook*, p. 130.

⁴ Cf. Hansard, speech of Mr. Gray in House of Commons, May 22, 1884.

⁵ *Ibid.*

preferred that the telephone should remain a subject for free exploitation by private enterprise.¹ The Post-office authorities, with their vast telegraph business to protect, were not content to rest with this rebuff, but appealed to the Courts. The case came on for trial in the High Court of Justice in December, 1880.² Meanwhile, May, 1880,³ competition between the rival Bell and Edison Companies had been ended by their amalgamation into the United Telephone Company. With the prospect of a telephone monopoly to contend with, the Post-office authorities were all the more eager to increase the scope of their telegraph monopoly by winning the suit for infringement. The main defence of the United Telephone Company was that the telephone differed essentially from the telegraph, for, whereas by the latter electric signals were transmitted, by the former the human voice was carried by means altogether unknown when the monopoly of the telegraph was granted to the Post-office. The Court disposed of this argument by pointing out that, if the telephone really transmitted the human voice, communication by it could not be more rapid than the velocity of sound, whereas it is in fact instantaneous. Therefore, transmission is by means of electric signals, and the telephone comes within the telegraph monopoly. This decision made the Postmaster-General master of the situation.

Private enterprise could now go no further in the task of introducing the telephone into Great Britain without the consent of the authorities responsible for the management of the State telegraphs. Neither could the State introduce the telephone without the consent of the owners of the patents. Unless the telephone was to be excluded

¹ Cf. Hansard, speech of Mr. Gray in House of Commons, May 22, 1884.

² *Economist*, December 25, 1880.

³ Sel. Com., 1895, testimony of Mr. Lamb.

altogether from the country, an understanding was necessary. In fact, the whole theory of State ownership of monopolies was on trial. The case was clearly stated by a keen-sighted contemporary observer:¹ "It will depend upon the promptitude and energy with which this and similar improvements are made generally available, whether the ultimate verdict upon the telegraph monopoly will be that it has justified its existence, or that, as a barrier to progress, it ought to be abolished."

The Postmaster-General at that time (Mr. Gladstone's Liberal Cabinet having lately been formed) was Mr. Fawcett, the eminent economist and expounder of John Stuart Mill. He would have been inclined on general principles to adopt a liberal policy towards the infant industry thus placed in his power, but he was anxious to protect his telegraph revenues. The telegraphs had been purchased by the State at an exorbitant valuation.² Instead of the £3,000,000 which Jevons had estimated to be a fair purchase price for the plant to be taken over from the several companies, the price had been swelled by payments for good will and expected profits as fixed by the arbitrators to the enormous sum of £8,000,000. Over £2,000,000 in addition had been immediately expended for extensions. The interest upon this huge capital, amounting to £326,417, had never been paid out of the profits, but was charged upon the consolidated fund. Since, however, the State adopted the policy, perhaps commendable, but unbusinesslike, of extending the telegraph service to rural communities more rapidly than commercial principles demanded, and substituted for the graduated rates of the companies a flat rate for all distances, there was still much difficulty in showing a profit. Fawcett had reason to fear that a rapid growth of the telephone industry would deprive his department of a por-

¹ *Economist*, December 25, 1880.

² P.M.G. Report, 1895, Appendix.

tion of its business, and cause an actual deficit in the telegraph accounts. Accordingly, he granted licenses to the United Telephone Company (April, 1881) and its subsidiary companies to operate exchanges in London and provincial towns upon conditions which he believed would protect the telegraph revenues.¹ At the same time the Post-office established exchanges of its own in a few places.²

The prospects now seemed good that, at last, the industry would get a fair start. It was time, for five years had elapsed since the invention of the telephone. In the United States, by March, 1881, there were only nine cities of more than 10,000 inhabitants, and only one of more than 15,000, without a telephone exchange.³ The license given by the Postmaster-General authorized the licensee to operate an exchange system in a designated city within a radius of two to five miles about a central point upon payment of a royalty of 10 per cent. of the gross receipts.⁴ Each license was to run thirty-one years from January 1, 1881, reserving to the Postmaster-General the right of purchase upon due notice at a fair valuation in 1890 or thereafter at the end of seven-year periods. The United Telephone Company chose London for its field of operations, and gave to subsidiary companies concessions to employ its instruments in the provincial towns. In return, these companies contracted to pay a fixed rental per instrument, and agreed not to sell or permit to be used in their respective districts any other telephones than those supplied by the United Telephone Company.⁵ During the succeeding year the business of the telephone companies grew rapidly, and the Postmaster-General saw the nominal net profits of this telegraph system cut down from £325,432, in the fiscal year

¹ P.M.G. Report, 1882.

² *Ibid.*

³ *Boston Electrical Handbook*, p. 130.

⁴ P.M.G. Report, 1882; Sel. Com., 1895, testimony of Mr. Lamb.

⁵ Hansard, speech of Mr. Gray, May 22, 1884.

ending March 31, 1881, to £213,892.¹ Taking account of the interest on the capital invested in the State telegraphs, there was in reality a considerable deficit. Fawcett perceived that a more vigorous policy was necessary to protect his telegraph revenues.

Up to this time he had granted licenses freely to the companies which agreed to pay the royalty. Now (1882) he decided to grant no more licenses unless the companies entered into a contract to sell to him, on terms to be fixed by arbitration in default of agreement, as many telephones as he desired, to be used for such purposes as he might think fit.² His purpose in inserting this condition was not disclosed, but perhaps he had some scheme for inaugurating competition with the United Telephone Company. He did not use the instruments in the State telephone exchanges, for in 1884, two years after the change of policy, there were only 783 subscribers to the Post-office exchange systems.³ At that time he had acquired 5,251 instruments by buying them indirectly through an American, of which number he had sold only 332.⁴ The only direct result of the new conditions was practically to prohibit the taking out of any more licenses. During the following two years 77 licenses were applied for, but only 8 were granted on account of the impossibility of complying with this condition.⁵ The terms of the agreement between the United Telephone Company and its subsidiary companies forbade the stipulated sale of instruments to the Post-office, and consequently no more subsidiary companies could be formed. This prevented the extension of the telephone to the cities not already supplied with exchanges.

At the same time (1882), when this change was made in the terms of the license, the government was deliberating

¹ P.M.G. Report, 1882.

² Hansard, speech of Mr. Gray, May 22, 1884.

³ *Ibid.*, Mr. Fawcett, in reply to a question, May 22, 1884.

⁴ *Ibid.*

⁵ *Ibid.*, May 22, 1884.

on another and quite different plan,—the advisability of encouraging competition with the United Telephone Company.¹ Applications for licenses to install exchanges in cities already entered by subsidiary companies of the United were received from a new company, the London and Globe, which professed to own the rights to an improved telephone which was not an infringement of the Bell and Edison patents. In July, 1882, Fawcett decided to grant the applications,² and it now seemed as if genuine competition would replace the half-hearted attempts the Post-office had been making. However, the London and Globe Company was quickly restrained by the courts from using its instruments,³ and in 1884 was bought up by the United Company. When the Postmaster-General found that he could neither secure a large stock of patented instruments to use as he might think fit in his contest with the rising telephone monopoly nor rely upon a rival company to evade the Bell and Edison patents, he adopted an attitude towards the telephone industry which was later described on the floor of the House of Commons as “the policy of strangulation.”⁴

Let us examine this policy in detail. The United Telephone Company wished to establish public call stations in London, in order that persons who were not subscribers to the telephone system might be able to make use of the service.⁵ This was being done in America, but was forbidden by the Postmaster-General, presumably because he preferred that such persons should be compelled to telegraph their messages. At Manchester, where it was allowed, the company was required to charge one shilling for such messages, that being the minimum rate on telegrams, and to pay 50 per cent. of the gross receipts to the Post-office.⁶ The policy of restricting the operations

¹ Hansard, May 19, 1884.

² *Ibid.*, July 17, 1884.

³ *Ibid.*, speech of Mr. Gray, May 22, 1884.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

of the operating companies to local areas was carried out with similar strictness. The radius of the area was never allowed to exceed five miles,¹ which, in cities like Liverpool and Manchester, excluded large numbers of suburban inhabitants whose interests lay inside the limits of the area. In certain cases, permission was given the companies to extend their wires outside the area upon payment of an extra royalty of $2\frac{1}{2}$ per cent. of the gross receipts from such wires, provided a separate wire was run from the residence of each subscriber the whole distance to the central exchange. This provision prevented the use of party lines for distant subscribers, and added nothing to the revenues of the Post-office.² The same attitude was shown in the conditions imposed by the department upon the licensees for the use of trunk lines; that is, telephone lines connecting the exchanges in separate areas. The Post-office would construct the lines and charge the companies an annual rental of £10 per mile for each trunk wire, plus one-half of the revenue above that sum which the companies should derive from their use.³ The companies accepted these conditions, heavy as they were,⁴ and announced their purpose to bear the expense of the trunk lines themselves, in order to give their subscribers to local exchanges the additional benefit of the trunk line service.⁵ The Postmaster-General refused to allow this, and required the companies to charge subscribers ten shillings per mile extra for the use of the trunk lines. This rate was practically prohibitory.⁶ Another requirement that seemed vexatious to the telephone companies was that in case a person called up on a trunk line was not a subscriber and could

¹ Hansard, speech of Mr. Gray, May 22, 1884.

² *Ibid.*

³ Letter of P.M.G., dated April 18, 1883, to the Lancashire & Cheshire Telephone Company.

⁴ Hansard, speech of Mr. Gray, May 22, 1884.

⁵ *Ibid.*

⁶ *Ibid.*

not answer immediately, the person calling him up must pay a double rate.¹ Still another example of the restrictions imposed upon the companies was the notification of certain clubs in Manchester which were supplied with the telegraph service at press rates that the service would be withdrawn unless all telephones were removed from the club-house. This was ostensibly on the ground that the telephones were used to redistribute racing news,² but under the circumstances the argument seemed specious.

These increasing restrictions had, by 1884, brought the telephone industry almost to a standstill. Strong opposition to the course of the Postmaster-General showed itself in Parliament. Replying to the criticisms directed against him, Fawcett said he would not discuss the expediency of the acquisition of the telegraphs at the enormous expense of £10,000,000, but he was trustee for the public, and was bound to see that their large investment was properly safeguarded.³ "The officials of the Post-office," said Fawcett, in reply to a question in the House of Commons, "had no motive except the interest of the department, which, in their view, was the interest of the public." Evidently, he had in mind the fiscal difficulties, which were such as really to cause anxiety. The net revenue of the telegraph service, which for the fiscal year ending March 31, 1882, had declined to £213,892, showed in the following year a further decline to £184,193.⁴ In the year ending March 31, 1884, there appeared an insuperable deficit of £19,697.⁵ Even before this the Postmaster-General had become thoroughly alarmed, as his conduct towards the telephone companies plainly showed. He now saw that obstruction of the telephone industry alone would never preserve his surplus. He must do something to stimulate the

¹ Hansard, speech of Mr. Gray, May 22, 1884.

² *Ibid.*

³ *Ibid.*

⁴ P.M.G. Report, 1883.

⁵ *Ibid.*, 1884.

telegraph business. Accordingly, he announced that as soon as possible the minimum rate on telegrams would be reduced from one shilling to sixpence.¹ But the public would not wait. It demanded that a more liberal policy toward the telephone industry should be adopted at once. In response to the popular pressure the Postmaster-General at last announced a radically new plan, that of free and universal competition.²

II.

The inauguration of free and universal competition consisted in calling in all the licenses hitherto granted by the Postmaster-General and reissuing them without the restriction to local areas. Henceforth all licensees could operate exchanges anywhere in the United Kingdom.³ This change of policy removed the vexatious hindrances upon the service of subscribers outside the local areas, and enabled the companies to construct their own trunk lines. The duration of the licenses, conditions of purchase by the State, and amount of royalties remained as before. A new provision was inserted in relation to way-leaves; that is, the right to run lines over property, public or private. Where the Post-office had acquired exclusive way-leaves for their telegraphs on railways and canals, the companies were to pay twenty shillings per mile each year for the right to share in the user.⁴ This was a very useful altho costly privilege to those companies that desired to construct trunk lines. Except for this provision the companies stood where they were before in the matter of way-leaves.

This matter was one that was destined to give the

¹ P.M.G. Report, 1883, 1884.

² *Ibid.*, 1884.

³ *Ibid.*, 1885; Hansard, August 7, 1884.

⁴ Sel. Com., 1892, testimony of Mr. Lamb.

companies much trouble. As licensees of the Postmaster-General, they did not share his statutory powers. Hence they could secure way-leaves for the construction of their lines only by costly and wearisome higgling with the local officials and citizens over whose property they wished to pass. The Postmaster-General was in a somewhat better position. By the Telegraph Act of 1878, if owners, lessees, or occupiers of buildings in towns, or owners, lessees, or occupiers of estates in the country, or road authorities anywhere, refused their consent to the erection of poles and wires on their property, or granted it only on onerous terms, he might appeal to a police magistrate or county judge, who was empowered to give his consent in lieu of that of the recalcitrant local authority or citizen. From his decision an appeal lay to the Board of Railway Commissioners. The same procedure was provided, under like conditions, when the Postmaster-General wished to put wires under the streets or fly them over the streets in cities, or to put a pole within thirty feet of a dwelling-house. The lack of these powers was the one great grievance of the telephone companies after the issuance of the amended licenses in 1884. They secured a recommendation from a select committee of Parliament in the next session that legislation be enacted conferring more powers in the matter of way-leaves, but nothing came of it.¹

The Postmaster-General certainly intended to do no more at present for the telephone industry. In 1885 he was compelled to face a larger deficit in his telegraph accounts than ever before. He then reported twenty-seven Post-office telephone exchanges in operation in various provincial towns, with a total of 1,141 subscribers. But by far the greater part of the telephone business was in the hands of the companies.² “The full effect of the telephone

¹ Sel. Com. 1885.

² P.M.G. Report, 1885.

competition with the telegraph," he said, "remains to be seen; but I cannot doubt that the telegraph revenue has been, and will be, adversely affected." Meanwhile he was preparing to execute his long-contemplated reduction of the minimum rate on telegrams. October 1, 1885, the new rates went into effect.¹ During the fiscal year ending March 31, 1885, the number of telegrams had been 33,000,000,—an increase of about half a million over the number transmitted during the preceding year. In the first complete fiscal year after the introduction of six penny telegrams the number transmitted was 50,000,000.² The average annual increase in the number of telegrams transmitted during the period of the shilling rate was 15 per cent.; the year after the reduction, it jumped to 65 per cent.³ The change thus unquestionably stimulated the use of the telegraph, but not enough to increase the gross or net revenue. The deficit continued.⁴ In 1886 it amounted to £39,607, and in the next year was still greater.⁵

The failure of the telegraphs to make a better showing, after the reduction of the minimum rate, was a bitter disappointment to the Postmaster-General, and seriously impaired the policy of free and universal competition. It had been hoped that the reduced rates would turn the scale,⁶ and, accordingly, the postal authorities had given little attention to the extension of their telephone system. In 1888 the number of subscribers had increased but little,—from 1,141 in 1885 only to 1,370,—altho in the meantime, three new exchanges had been established.⁷ Free and universal competition thus was practically limited to the private companies alone. But, as we have seen, the fundamental patents were controlled by one com-

¹ P.M.G. Report, 1886.

² *Ibid.*, 1887.

³ *Economist*, July 30, 1887.

⁴ P.M.G. Report, 1886, *et seq.*

⁵ *Ibid.*, 1887.

⁶ *Economist*, January 29, 1887.

⁷ P.M.G. Report, 1888.

pany, the United Telephone Company. By organizing subsidiary companies to operate these patents and apportioning the field among these companies, it was able to control their policy and effectually prevent any genuine competition. Of course there were licenses in the possession of independent organizations, but they could get no telephones without accepting the terms of the United. The latter company confined its operations to the metropolis, and received rentals from its subsidiary companies. The Bell and Edison patents would expire, however, in December, 1890, and July, 1891, respectively.¹ Then genuine and lively competition might be expected. In anticipation of such an event the telephone magnates determined to amalgamate the several operating companies into one large corporation, which would be more capable of dealing with the situation.

For some months the shares of the amalgamating companies fluctuated, as the rumors of the coming merger were confirmed or denied. The *Economist*, commenting on the evident confidence of the shareholders that a merger would strengthen their position in dealing with the government,² warned them that "the mistake which has been made in giving too high a price for the telegraph systems is not likely to be repeated when the telephone companies come to be dealt with." But the shareholders had confidence in their officials. Fawcett's Conservative successor was forced to watch the consummation of the scheme, which he was powerless to prevent. Since he refused to sanction the amalgamation by the issuance of a new license to its promoters, the necessity of obtaining his consent was avoided by the expedient of having one of the companies buy up the others.³ It thus retained its

¹ Sel. Com., 1895, testimony of Mr. J. S. Forbes, Chairman of the National Telephone Company.

² *Economist*, May 12, 1888.

³ Sel. Com., 1895, testimony of Mr. Forbes.

existing license available for working over the whole country. The shares of the National Telephone Company, one of the leading operating companies, at par value of £5, were exchanged at the rate of £12 10s. for each share of United Telephone Company stock, and at the rate of £1 6s. 3d. for each share of the Lancashire & Cheshire, the other leading operating company.¹ Thus the National Telephone Company became the British telephone "trust."²

This result of the policy of free and universal competition presented difficult problems to the Postmaster-General, Mr. Raikes. His uneasiness was shown in the establishment of six additional Post-office telephone exchanges in the next two years,³—a greater number than had been constructed in a like period since 1883, the year before the unlucky policy had been adopted. At the same time he was strongly urged, both in Parliament and in the press, to serve notice on the "trust" that he should buy it out in 1890, according to the terms of the licenses.⁴ He contented himself, however, with announcing that he would await the expiration of the patents and then try a new policy.⁵ He still clung to his belief in competition. The most intelligent contemporary opinion about the consolidation is reflected in the columns of the *Economist*. That paper expressed confidence in the Postmaster-General,⁶ but perceived the full consequence of the situation. "The less hope the new company has," it said,⁷ "of being able to realize solid value for the 50 per cent. of water it has introduced into its stock, the more necessary will it be for it to take

¹ *Economist*, May 25, 1889.

² Consolidation was carried out May 1, 1889. Cf. Sel. Com., 1895, testimony of Mr. Forbes.

³ Parliamentary Papers, 1899, lxxviii. Special report on telephones.

⁴ Sel. Com., 1895, testimony of several witnesses.

⁵ *Ibid.*

⁶ *Economist*, April 13, May 25, 1889.

⁷ *Ibid.*, June 8, 1889.

steps to write down its capital account out of revenue; and this, of course, will entail the charging of higher rates than if the company had only to earn fair dividends on its real capital. . . . It is sufficiently obvious that the telephone amalgamation is directly hostile to the public interests."

The conduct of the National Telephone Company after the amalgamation was not calculated to dispel the fears of the *Economist*. It had previously absorbed two of the smaller companies operating under licenses issued in 1884.¹ It now proceeded to buy up as many as possible of the rest. Within the next three years it secured ten out of the fourteen outstanding licenses, at the cost of a considerable addition to its watered capital.² This so strengthened its monopoly that the company felt able to meet the threatened competition at the expiration of the patents.³ On May 1, 1890, the rates were reduced in Liverpool and Manchester,⁴ where competition was most imminent. The experiment proved satisfactory to the officials of the company, and on January 1, 1891, a general reduction was made on all exchanges of the company except in London.⁵

In July the Edison patent expired (the Bell patent having terminated in the preceding January), which gave the Postmaster-General his opportunity to attack the obnoxious monopoly. Mr. Raikes found the problem a hard one to solve, however, and, despite the public clamor against the "trust," could decide on no immediate course of action.⁶ Not long afterwards he died. Competition seemed further away than ever, and the service was execrable.⁷ In April, 1891, a public meeting was held in London, and a committee formed for the protection

¹ Sel. Com., 1895, testimony of Mr. Forbes.

² *Ibid.*

³ *Economist*, July 12, 1890.

⁴ Sel. Com., 1895, testimony of Mr. Forbes.

⁵ *Ibid.*

⁶ *Ibid.*, 1892, testimony of Mr. Lamb.

⁷ *Ibid.*

of telephone subscribers.¹ Every effort to induce the directors of the National Telephone Company to reduce the rates in London or improve the service was, however, futile. On February 22, 1892, the London Chamber of Commerce formally complained to the government.² Public dissatisfaction with the monopoly became so great that Mr. Ferguson, who had succeeded Mr. Raikes, was obliged to reopen the whole subject.³ It was now too late to buy in the system of the National Telephone, except at an enormous sacrifice. The favorable opportunity for that step had been allowed to pass in 1890. Yet the government could not view with equanimity the continued existence of an unregulated monopoly.

The inefficiency of the National Telephone Company's system was frankly acknowledged by its officials. "I am prepared to concede," said its chairman,⁴ "that the telephone company, which conducts 93 per cent. or 94 per cent. of the whole telephone business of the country, conducts a great deal of it monstrously badly." At that time the telephone lines of the company throughout England consisted each of one wire, which, after passing through the instrument at either end, connected with the ground.⁵ Thus the ground served the purpose of a return circuit. When a number of these single wires were strung together upon poles for any considerable distance, conversation taking place over one wire could be plainly heard over the neighboring wires as well. This induction, as it is called, occurred even if the wires were insulated in the highest degree known to the art. Moreover, the operation of electric currents, such as street light circuits, in the neighborhood of the single wire telephone system, produced buzzing noises, which at times rendered con-

¹ *Economist*, April 18, 1891.

² *Ibid.*, February 27, 1892.

³ P.M.G. Report, 1892.

⁴ Sel. Com., 1892, testimony of Mr. Forbes.

⁵ *Ibid.*

versation well-nigh impossible. It had been discovered in the United States that these difficulties could not be overcome without the use of a second wire, instead of the earth, to complete the circuit. The introduction of the twin-wire or metallic circuit system meant not only the reconstruction of the entire plant, both overhead and underground, but also the replacement of all the central office switchboards with apparatus designed to meet the new conditions. Although the change had been begun in New York City in 1887,¹ London was still struggling along with the grounded circuits. This was the chief cause of the wretched condition of the telephone system in that city.²

Telephone users were all the more aggravated by the fact that the "trust" was making very large profits. The dividends upon shares of National Telephone Company stock since the amalgamation had been 6 per cent., which was equivalent to 15 per cent. to original holders of stock in the United Telephone Company.³ To crown all, the rates in London were very high.⁴ The company tried to justify its charges on the plea that it had to pay 10 per cent. of its gross receipts as royalty, besides taxes and cost of way-leaves. The real secret of the high charges, according to the *Economist*,⁵ was that it had to pay dividends on capital that had been watered to the extent of over 50 per cent.

The company admitted the necessity of installing metallic circuits in order to improve the service in large cities, but asserted that it could not do anything without statutory powers to secure way-leaves. So long as it was wholly dependent upon the voluntary consent of local

¹ United States Bureau of the Census, Special Report on Telephones and Telegraphs, published 1906, p. 53.

² Sel. Com., 1892, testimony of Mr. Lamb.

³ *Economist*, February 27, 1892.

⁴ *Ibid.*

⁵ *Ibid.*

authorities and subject to the caprice of each individual property owner, no progress could be made.¹ On the other hand, the municipal authorities insisted upon the right to make conditions upon the granting of their consents without appeal to any third party. The problem that faced the Cabinet was to reconcile these antagonistic interests, in order that the public might have the benefit of an improved telephone service, and at the same time to protect its own interest, the public revenue from the telegraphs. The solution of this problem was presented in a Treasury Minute, dated May 23, 1892. Herein the Lords of the Treasury proposed definitely to abandon the plan of free and universal competition, and adopt in its stead a plan of governmental co-operation with private enterprise.²

III.

The new proposal was, in brief, that the telephone companies should surrender the right to construct trunk lines and confine their future operations to local areas to be designated by the Postmaster-General. In return for these concessions the way-leave powers of the Postmaster-General, under the Acts of 1863 and 1878, would be conferred upon the companies, subject, as a condition of the license, to the approval of the local authorities in each area in which the licensee should desire to operate exchanges. If, after approving an application, the local authorities should impose onerous conditions to their consent to the construction of telephone lines by licensees of the Postmaster-General, the latter might request the withdrawal of the conditions. In case of a refusal the difference between the local authorities and the Postmaster-General should be settled according to the method

¹ Sel. Com., 1892, testimony of Mr. Forbes.

² Treasury Minute, May 23, 1892.

provided in the Telegraph Act of 1878.¹ Existing trunk lines would be purchased by the State. No more licenses would be granted for the whole country, but the Postmaster-General reserved the right to license any number of exchanges in the same area or to compete himself. However, no license would be granted to a new company unless there was evidence of sufficient capital to carry out the undertaking (to prevent the issuing of licenses to schemers whose purpose was to sell out to the "trust" at a handsome profit,—a trick that had been successfully executed with several of Mr. Fawcett's licenses), nor should any new company be licensed without a guarantee that it would construct its system entirely of twin wires. The royalties and other provisions of the existing licenses were to remain unchanged.

The great merit of this plan, from the standpoint of the government, lay in the fact that a company was already organized which stood ready to accept its terms and engage in vigorous competition with the National Telephone Company. Unconvinced by the experience of the eight years that had elapsed since Fawcett made his momentous change of policy, the ministers still put their trust in competition. They believed that, since the patents had expired, competitors would at last be able to make head against the monopoly and compel it to provide a more efficient service. If the government owned the trunk lines and converted them into metallic circuits, the obsolete single wire system of the National Telephone Company would be nearly useless in connection with them. If a rival company should then install exchanges with twin-wire subscribers' lines in the local areas to compete with the National, the latter would be compelled to do likewise or go to the wall. The ministers were confident that the National would surrender its

¹ See *ante*, p. 107

trunk lines; for, if it did not, it could not get the statutory way-leave powers which were essential to the improvement of its service. Without these powers it could not long maintain its existing exchanges, since the local authorities and citizens, upon whose sufferance its present way-leaves rested, would be only too glad to transfer their consents to a company that promised an improved service at lower rates.¹

This new rival of the "trust," invoked to save the telephone situation, was the New Telephone Company. It was organized in 1884, to take over the patents of Sylvanus P. Thompson, who thought he had succeeded in evading the Bell and Edison patents.² The Thompson patents, however, proved worthless,³ and the company did nothing with its license until the expiration of the Bell and Edison patents. Then, in November, 1891, its capital stock was increased from £120,000 to £750,000,⁴ and it was announced that the company intended to introduce the metallic circuit into London and compete with the National.

One of the leaders in the movement to inaugurate competition with the National was the Duke of Marlborough. He had been laying his plans for a couple of years,⁵ but found investors reluctant to risk their capital in the enterprise unless the company could obtain statutory powers in the matter of way-leaves.⁶ Upon the adoption of the proposal laid down in the Treasury Minute, he expected to begin work at once, and ultimately to provide efficient telephone service at about half the rates of the National.⁷ In April he was so confident of success that

¹ Sel. Com., 1892, testimony of Mr. Lamb.

² *Ibid.*, Appendix 8.

³ *Ibid.*, testimony of Mr. Wallace, a director of the New Telephone Company.

⁴ *Ibid.*, Appendix 8.

⁵ *Ibid.*, 1895, testimony of Mr. Benn, a telephone expert and member of Parliament.

⁶ *Ibid.*, 1892, testimony of Mr. Forbes.

⁷ *Ibid.*, testimony of Mr. Wallace.

he made an agreement with the Association for the Protection of Telephone Subscribers, defining the terms upon which he would operate his prospective system.¹ He guaranteed to serve his subscribers for £12 10s. per annum instead of £20, the rate of the National, for the use of a telephone. In the previous month the new company absorbed the Pioneer Telephone Company of London and the Mutual Telephone Company of Manchester, and thus acquired the only licenses in England not in the possession of the "trust."² The first-mentioned was a company organized in February, 1892, on an old license which had never been used, for the purpose of raising capital for use in carrying out the Duke of Marlborough's plans.³ The latter was a true Mutual enterprise, started in 1890 to compete with the National's system in Manchester. It introduced metallic circuits, cut rates below those of the National, and, in less than two years gained as many subscribers as the National had in a dozen years.⁴

If this was the result of competition in a local area by a puny rival, without access to trunk lines, what might not the National expect from vigorous competition in all the local areas of the kingdom by the Duke of Marlborough's big company, when on an equality with the National in regard to trunk lines? Naturally, the officials of the National protested at the proposals contained in the Treasury Minute, complaining that their company would not receive a sufficient recompense for the surrender of its trunk lines.⁵ The government, however, was so confident of the strength of its position that it disregarded the company's protests, and went ahead with its scheme.⁶ A bill was engineered through Parliament, giving to the proposals the force of law, and appropriating

¹ Sel. Com., 1892, agreement printed in the Appendix.

² *Ibid.*, testimony of Mr. Wallace.

³ *Ibid.*

⁴ *Ibid.*, testimony of Mr. Lamb.

⁵ *Ibid.*, testimony of Mr. Forbes.

⁶ *Ibid.*, report.

£1,000,000 for the purchase and extension of the trunk lines.¹ The government's confidence appeared to be justified, when on August 11 the chairmen of the National and New Telephone Companies respectively signed heads of arrangement with the Postmaster-General to carry out the new policy of public partnership with private enterprise.²

What was the cause of this sudden alacrity on the part of the National to accept the terms, of the harshness of which it had so recently complained? Simply that in the mean time the rival companies had come to an understanding with one another, and decided to co-operate instead of competing. The prospectus of the New Telephone Company, which appeared July 27, 1892, tells the story.³ It showed that a contract, the terms of which were not given to the public, was made with the National Telephone Company on July 14, only sixteen days after the passage of the act which was to inaugurate competition between them, and that one-half of the Board of Directors of the New company was taken from the directorate of the National. The conclusion was obvious. The New Telephone Company never would operate an exchange or construct a line in competition with the National, and it never did.⁴ At that time the National subscribed to a third of the capital stock of the New company, and before the end of the year it gained complete control of its quondam rival,⁵ at the cost of a large infusion of water into its already well-watered capital.⁶

The failure of this attempt to inaugurate competition in the telephone industry was a bitter disappointment to the Postmaster-General and to those who believed

¹ Enacted June 28. Cited as the Telegraphs Act, 1892.

² Parliamentary Papers, 1892; P.M.G. Report, 1893.

³ Sel. Com., 1895, Appendix.

⁴ *Ibid.*, testimony of Mr. Forbes.

⁵ *Ibid.*

⁶ *Economist*, December 17, 1892.

in the universal application of the competitive principle.¹ The Duke of Marlborough, in a series of public letters,² defended the course of his company in merging with the monopoly; but the sudden collapse of his plans was a heavy blow, and undoubtedly hastened his death, which occurred that autumn.³

During all the next year the Post-office department conducted negotiations for the transfer of the trunk lines to the State,⁴ but it was not until two years had passed after the heads of arrangement were signed that an agreement was completed.⁵ The National Telephone Company agreed to sell all its trunk lines at cost price, as shown by its books (the sum to be settled in case of disagreement by arbitration), plus 10 per cent. for the expenses of administration, and to limit its operations to exchange areas as defined by the Postmaster-General. It was to be permitted to run wires to subscribers outside the limits of the local areas, but not to establish exchanges outside those limits. The company was to connect its exchanges with post-offices as specified by the Postmaster-General for the termination of trunk lines. The Postmaster-General, in return, conferred on the company all the powers authorized by the Act of 1892. In addition, he agreed to construct underground conduits connecting exchanges in the streets of municipalities where the company could not obtain way-leaves, and to reduce the fee from 20s. to 1s. whenever he allowed the company to run lines on any railway or canal on which he possessed exclusive way-leaves. Thus was established the novel partnership between the department and the company.

¹ *Economist*, August 27, 1892.

² *London Times*, August 20; September 6, 1892.

³ *Sel. Com.*, 1895, testimony of Mr. Forbes.

⁴ P.M.G. Report, 1893.

⁵ *Parliamentary Papers*, 1894, lxx. 387. The agreement was signed August 7, 1894.

The department had already begun the construction of trunk lines,¹ and by 1895 had expended £355,000 of the sum appropriated in 1892.² In the following year the transfer of the company's trunk lines was carried out under the terms of the agreement. The department acquired 2,651 miles of trunk lines, containing 29,000 miles of wire at a price, fixed by experts, of over £475,000.³ In this year an Act of Parliament sanctioned an expenditure of £300,000 on the trunk lines in addition to the £1,000,000 authorized under the Telegraph Act, 1892.⁴

About the same time that the impossibility of forcing private enterprise to compete in the telephone industry was at last reluctantly recognized by the Post-office authorities, it was also seen that the attempt to compete by means of an improved and cheapened telegraph service had only resulted in failure. The deficits which had begun under Fawcett had continued ever since.⁵ The reduction of the minimum rate of charge did not, as we have seen, diminish the loss. In 1890 it had become impossible to defer longer the increase of pay demanded by the employees of the department, and in spite of the unsound state of the telegraph finances the increase was granted.⁶ The press service was, and always had been, conducted at a loss, and no change could be made without alienating the support of an influential interest.⁷ The privilege of sending telegrams free of charge, which had been granted to the railroads by the terms of sale of the telegraphs in 1869, caused an annual loss to the department.⁸ Finally, the telephone was taking away from the telegraph the most lucrative part of its business, that

¹ P.M.G. Report, 1893.

² *Ibid.*, 1895.

³ *Ibid.*, 1896. The exact price was £459,114 3s. 7d. + £18,164 13s.

⁴ 59 & 60 Vict. c. 40.

⁵ P.M.G. Report, 1895, Appendix.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ *Ibid.*

between large neighboring cities.¹ For instance, the number of telegrams passing between Liverpool and Manchester actually diminished during the early nineties. Indeed, the tendency of the terms of partnership between the telephone company and the Post-office was to confine the operations of the company to the more profitable local areas, leaving the department to extend the telegraph service to the remote and unprofitable districts,²—a task which it performed with a persistency that redounded more to its honor than to its profit. In 1894 the deficit in the telegraph accounts amounted to £178,000, which was partly offset by royalties from the telephone company amounting to £70,900.³

Despite the unsatisfactory financial condition of the telegraph system, the service was excellent. The rates were low. The lines extended to all parts of the kingdom.⁴ No country in Europe possessed so good a telegraph service as England, or made so great a use of that means of communication.⁵ In regard to the development of the telephone industry, on the contrary, Great Britain was behind the more progressive countries of Europe, and far behind the United States.⁶ In 1895 there were only 9,000 telephone subscribers in London out of a population of four and a quarter million. In Christiania, Sweden, at the same date there were 3,300 subscribers out of a population of only 152,000.⁷ The rates in Christiania were about one-third of the rates in London. The comparison, to be sure, proves nothing, but suggests a great deal. At any rate, the public was dissatisfied with the

¹ P.M.G. Report, 1895, Appendix.

² *Ibid.* Cf. *Economist*, June 4, 1892.

³ Sel. Com., 1895, testimony of Mr. Lamb.

⁴ P.M.G. Report, 1895, Appendix.

⁵ Sel. Com., 1895, testimony of Mr. Forbes.

⁶ *Ibid.*, testimony of Mr. Lamb. Cf. also Sel. Com., 1898, Appendix 5; also *Economist*, March 9, 1895.

⁷ *Ibid.*, testimony of Mr. Lamb.

existing conditions. Since the policy of local competition by private enterprise had failed, the public was too impatient to wait for the uncertain results of the surviving part of the plan of 1892,—public partnership with the monopoly. It began to clamor for a new solution of the problem. Such a solution was proffered by the advocates of municipal competition.

IV.

The prime instigator of the movement for municipal competition was the city of Glasgow. In that stronghold of municipal ownership the water, gas, electric light, and street railway undertakings were already in the hands of the Town Council. The telephone company was the sole private corporation possessing rights over the city streets. For this reason, as well as because there was great dissatisfaction in Glasgow with the service of the company, the Town Council applied as early as 1893 for a license, under the terms of the Treasury Minute of 1892, to establish a competing service.¹ In 1895 the Postmaster-General had yet not granted this application.²

At the same time the Town Council adopted a policy intended to discourage the company from maintaining its system in the city. Under the terms of the act by which the Council had recently acquired the power to construct and operate tramways, the telephone company was given two years in which to install metallic circuits on its Glasgow system under penalty of forfeiting all claims for damages that might result from the municipalization and electric equipment of the tramways.³ The

¹ Sel. Com., 1895, testimony of Mr. Colquhoun and Mr. Chisholm, Town Councillors of Glasgow. Application was made April 6, 1893.

² *Ibid.*, testimony of Mr. Preece, chief electrician to the Post-office.

³ *Ibid.*, testimony of Mr. Colquhoun and Mr. Chisholm.

Council refused, however, to grant the company leave to dig up the streets in order to install the metallic circuits in underground conduits.¹ Yet it had already decided to equip its tramways with overhead trolley wires, the induction from which would cripple the National's single wire telephone service. The telephone company, which understood the attitude of the Council, fought this tramway act bitterly, but was defeated.² This defeat prevented the company from improving its service, which of course was what the Town Council wished, since it strengthened their case for municipal competition.

The Council asserted in support of its application for a license that the municipalities were better fitted than a company to operate telephone systems within their limits,³—an assertion for which in the case of Glasgow there was certainly much foundation. Moreover, if competing municipal exchanges were authorized, the Post-office would have a choice of two systems in each municipality when the licenses of the National should expire in 1911. It would not then be obliged to buy out the National at its own price or renew its license against the will of the government of the day, solely in order to insure that the public might not be deprived of all telephone service whatsoever.⁴ Finally, the Council asserted that nothing less than municipal competition would compel the "trust" to maintain a satisfactory standard of efficiency at reasonable rates.⁵ In 1897 action upon the application for a license could no longer be delayed. The Treasury sent a Commissioner to Glasgow to hold an inquiry, and report on the expediency of granting a license to the Town Council to compete with the telephone monopoly.

¹ Sel. Com., 1895, testimony of Mr. Colquhoun and Mr. Chisholm.

² *Ibid.*, testimony of Mr. Forbes.

³ *Ibid.*, testimony of Mr. Colquhoun and Mr. Chisholm.

⁴ *Ibid.*

⁵ *Ibid.*

This Treasury Commissioner, after a careful investigation, rendered a report adverse on the merits of the question to the policy of municipal competition.¹ There were then 5,036 subscribers to the National's telephone system in Glasgow. All lines were constructed with grounded circuits. The service was not efficient, but the rates were reasonable. The continued inefficiency of the service was caused, in the Commissioner's opinion, by the Corporation's refusal to grant the necessary facilities to the company to substitute metallic for grounded circuits.² The reason which the Corporation gave for its refusal to grant the necessary facilities—namely, that it wished to retain complete control of its streets—"is not reasonable or justifiable, on grounds of policy or otherwise, unless it be thought that the Corporation are justified in their refusal, because they desire to establish a telephone system of their own, and to place the National Telephone Company at an enormous disadvantage in competing with them for the patronage of the public."³

The Commissioner thought it was inexpedient to grant a license to Glasgow because telephone competition diminished the utility of the service to subscribers, who must either join both systems or be shut off from communication with subscribers to the other system. Moreover, if two systems existed in the same area, the acquisition of the telephone by the State in 1911 would be more expensive, since discrimination between the two would be unjust, nor would it be fair to grant a license to the Corporation without requiring it to give the company equal way-leave powers. He thought the Corporation had not shown satisfactorily that they could finance and operate the proposed system without undue risk of

¹ Report of a Commission of Inquiry into the Telephone Exchange Service in Glasgow to the Lords Commissioners of Her Majesty's Treasury, 1897, by Andrew Jameson, Sheriff of Perthshire, hereafter to be cited as Glasgow Report, 1897.

² *Ibid.*

³ *Ibid.*

putting a new and serious burden on the rate-payers of Glasgow.¹ He advocated the adoption of the policy successfully tried by Liverpool and other large English boroughs (where there was no demand for municipalization of the telephone).² These boroughs came to an agreement with the National, whereby the latter promised to install underground metallic circuits on receipt of adequate way-leave powers from the Borough Councils.³ Since the Glasgow authorities would not listen to this advice, he preferred the establishment of a competing system by the Post-office, on account of the advantages of centralized control, rather than intrust the undertaking to the local authorities.⁴ If the Post-office, however, was unready to undertake vigorous competition, he recommended that as a last resort the license be granted.⁵

This report was rendered November 29, 1897. Shortly after the situation in London again came up for discussion. March 17, 1898, at a conference of delegates representing the Corporation of London and the Vestries and District Boards of the Metropolis, it was unanimously voted that the London telephone service was inadequate, inefficient, and costly. Mr. Forbes, the head of the National company, wrote a letter to the conference, stating his side of the case. There were on December 31, 1897, 17,371 subscribers in London, paying an average subscription of £14 10s. 6d. This worked out to a charge of about 1d. per conversation averaging 200 words. The minimum charge for telegrams was 6d. for a message of 15 words. He admitted that the service was inefficient, but this was caused by the refusal of

¹ Glasgow Report, 1897.

² Sel. Com., 1895, testimony of Mr. Clare, representative of the Association of Municipal Corporations.

³ Glasgow Report, 1897.

⁴ *Ibid.*

⁵ *Ibid.*

London to grant such facilities for putting wires underground as had been granted by Liverpool, Manchester, Birmingham, and Leeds.¹ The *Economist*, commenting on the discontent with the service provided by the National Telephone Company, pointed out² that the company was paying dividends of 6 per cent. on its watered capital. It had also added £273,429 to its reserve fund in four years. In 1897 it could have paid 22½ per cent. on its original United Telephone Company shares³ if it had cared to do so. The government decided to appoint another Select Committee to investigate the whole subject⁴ before acting upon the Glasgow Report.

This committee did its work thoroughly, not only taking a huge mass of testimony itself, but reviewing that given before the Select Committee of 1895 and the Treasury Commissioner at Glasgow in 1897. It reported that the telephone was not of general benefit to the community, nor was it likely to be while the monopoly continued its present policy. The system of high flat rates for an unlimited service and the lack of adequate public pay stations prevented the popularization of the telephone, and restricted its use to the wealthy classes. The necessity for the company to recoup itself for its capital expenditure before the expiration of its license in 1911 (which would render its plant worthless if the government chose not to purchase it) prevented the reduction of rates to a reasonable level. A more efficient service was unlikely on account of the precarious tenure of the company's way-leaves and the difficulty of obtaining adequate facilities from the local authorities.

Nevertheless, the density of population and general diffusion of wealth made England an exceptionally promising field for the expansion of the telephone industry.

¹ Cf. Glasgow Report, 1897, Appendices 26-55.

² *Economist*, April 2, 1898.

³ *Ibid.*

⁴ Sel. Com., 1898, Report.

Competition alone, the committee reported, could ameliorate the situation. Yet, if there was to be competition between the municipalities and the company, it must be started on a fair basis. Under the existing conditions each possessed peculiar advantages. The company could give preferential rates,—a power which, when exercised in Plymouth in 1884, completely destroyed a competing exchange established there by the Post-office.¹ The company could refuse service altogether in order to force the concession of way-leaves from property owners and occupiers. It could make its prosperous exchanges pay the cost of competition in areas where municipal exchanges might be established. The municipalities, on the other hand, could give to themselves and refuse to their rival permission to lay underground conduits in the public streets. The government was variously urged to untie the tangle by inaugurating vigorous competition on its own account² or by buying the company's system at the market valuation and operating the telephone as a branch of the telegraph monopoly.³ It decided, however, to authorize municipal competition.⁴

A Treasury Minute,⁵ supplemented by an Act of Parliament,⁶ defined the new policy. The municipal authorities were empowered to construct exchanges and supply telephones in competition with the National Telephone Company on condition that they grant to the company equivalent way-leave powers over the city streets. They might take out licenses for not more than twenty-five years, but in case the term extended beyond the year 1911 the license of the company for the corresponding

¹ Sel. Com., 1898, testimony of representative of Post-office.

² *Ibid.*, Report.

³ *Fortnightly Review*, "The Telephone Tangle and the Way to Untie it," by Mr. A. H. Hastie, December, 1898.

⁴ House Resolution, March 9, 1899.

⁵ May 8, 1899.

⁶ August 9, 1899.

area would be extended for an equal period. Otherwise, provision was made for the purchase in 1911 of all portions of the plants of both the municipal authorities and the company that came up to the standard of efficiency prescribed by the Postmaster-General. Rival systems in the same area, under certain conditions, would be required to arrange for intercommunication between subscribers to one another's system. Carefully drawn sections of the Treasury Minute regulated toll charges and terminal fees where intercommunication between different systems was concerned, forbade discrimination in rates, and provided for the arbitration of the value of the plant taken over in 1911. Municipalities were required to pay the same royalty that the company was paying. Finally, the act appropriated £2,000,000 for the use of the Postmaster-General in extending the trunk lines and constructing local exchanges.

Both the city of Glasgow and the Postmaster-General proceeded without delay to act according to the spirit of the new policy. Glasgow received its license March 1, 1900,¹ and immediately began the construction of a municipal telephone system. Upon its completion cut-throat competition with the company was vigorously prosecuted. Meanwhile the Postmaster-General turned his attention to London. Exchanges were constructed, and on February 24, 1902, the Post-office system was opened for business.² The previous attempts of the Post-office to establish competing exchanges had not been successful. On December 31, 1898, the total number of subscribers to the Post-office exchanges was 1,213³ as compared with 1,370 just ten years earlier.⁴ Of these 1,213, 45 had given notice of their intention to leave.⁵

¹ P.M.G. Report, 1900.

² *Ibid.*, 1902.

³ Parliamentary Papers, 1899, lxxvii.

⁴ See *ante*, p. 108; P.M.G. Report, 1888.

⁵ Parliamentary Papers, 1899.

The total number of exchanges established by the Post-office was 49. Of these, 35 had failed to hold their own in the struggle with the National for existence, 7 being altogether without subscribers.¹ The failure of the Post-office exchanges to make a better showing was ascribed to the refusal of the Treasury to grant the department adequate means for pushing its undertakings.² For example, no appropriation was granted to enable the department to send out canvassers, as the National did at competitive points, in order to drum up business.³ That the Post-office could conduct the telephone business successfully was shown by the condition of the trunk lines acquired in 1896. Two years later they were the most extensive in Europe,⁴ although the local exchanges which had remained in the hands of the company were notoriously inefficient. The Post-office was now to have a fair chance to operate a local exchange.

In London the Postmaster-General decided, however, to co-operate instead of competing with the National Telephone Company. This policy disgusted ardent advocates of competition, who had expected to see the company crowded to the wall,⁵ but seems justified by the event. An agreement was made providing for intercommunication between the two systems, joint rates, and purchase of the company's plant in 1911 on the so-called "tramway terms." The government will buy all the plant that conforms to the standard of efficiency prescribed by the Postmaster-General at a price equal to its value *in situ*, to be determined in case of disagreement by arbitration, but with no payment for good

¹ Parliamentary Papers, 1899.

² Sel. Com., 1895, testimony of Mr. Lamb.

³ *Ibid.*, testimony of Mr. Preece.

⁴ *Ibid.*, 1898, Report.

⁵ *Economist*, November 30, 1901. Cf. also Hansard, speech of Mr. Kearley in the House of Commons, May 22, 1905.

will.¹ This agreement insures as good service as the government itself provides, at reasonable rates, during the interval until the whole telephone system can be brought under the direct control of the State. In other parts of England the Post-office is gradually establishing local exchanges in connection with extensions of the trunk lines into places where the National has not entered.²

The development of municipal exchanges, however, has been a disappointment to those who looked upon that expedient as the final solution of the telephone tangle in Great Britain. Out of the 1,334 municipalities which were entitled under the Act of 1899 to take out licenses for the establishment of municipal exchanges, only 13 have availed themselves of the privilege,³ and of these 13 only 6 have actually constructed exchanges.⁴ One of these, Tunbridge Wells, after operating its plant for a year, sold out to the company, which guaranteed a reduction in rates as well as the reimbursement of the Corporation for all its capital sunk in the undertaking.⁵ The remaining 5 municipalities were operating their exchanges in 1905.⁶ In Glasgow, where competition was the keenest, the municipal exchange got ahead of its rival in its third year (1903).⁷ Yet a deputation ultimately was sent to the Postmaster-General to beg his good offices in bringing about an understanding with the company.⁸ "All the brave talk about competition seemed to have vanished into thin air."⁹

By the time that municipal competition was acknowl-

¹ P.M.G. Report, 1902.

² *Ibid.*, *et seq.*

³ Hansard, speech of Lord Stanley, Postmaster-General, in House of Commons, August 9, 1905.

⁴ Municipal Year Book, 1904.

⁵ *Ibid.*

⁶ Hazell's Annual, 1906.

⁷ Municipal Year Book, 1904.

⁸ Hansard, speech of Lord Stanley, August 9, 1905.

⁹ *Ibid.*, speech of Mr. Kearley, May 22, 1905.

edged a failure,¹ the position of the telegraph had become almost hopeless.² The net deficit on the operation of the State telegraphs (exclusive of the interest on the capital investment, amounting to £298,860) steadily increased to £651,881 in 1902.³ During the fiscal year 1903-04 the number of inland telegrams in Great Britain actually decreased from 92,471,000 to 89,997,000.⁴ The loss was accounted for, partly by trade depression and stock exchange quietness, but chiefly by the unprecedented telephone expansion. The income of the Post-office from royalties increased by 18.4 per cent., making a total from that source of £325,525.⁵

This gratifying increase in the telephone facilities of the kingdom was not allowed to give the public much cause for satisfaction. We have seen that the chairman of the National had warned the government in 1898 that, owing to the necessity for the company to recoup its expenditures before 1911, it would probably not extend its operations into new districts after 1904.⁶ Upon being asked, "Do you mean to say that after 1904 you will refuse all new subscribers?" Mr. Forbes replied, "I think it is highly probable."⁷ In February, 1904, at a meeting of shareholders of the company, Mr. Forbes's successor pointed out that each additional subscriber involved a capital outlay, and that the only alternative to incurring large expenditures was the deplorable policy of discouraging would-be subscribers. At that time more than 10,000 persons were waiting to join the company's system.⁸ Still the government allowed the year to pass without exercising its privilege under the terms of the license of buying the system up.

¹ Hansard, speech of John Burns in House of Commons, August 9, 1905.

² P.M.G. Report, 1898.

³ *Ibid.*, 1903, Appendix R.

⁴ *Archiv für Post und Telegraphie*, Berlin, January, 1905.

⁵ *Ibid.*

⁶ Sel. Com., 1898, testimony of Mr. Forbes.

⁷ *Ibid.*

⁸ *Economist*, March 26, 1904.

In 1905, however, it became necessary to make some new arrangement with the National, in order to keep up its service to a satisfactory standard of efficiency. Unless some assurance was given to the company of fair treatment in 1911, the government would have no control over its operations in the interval. Moreover, the government realized that nothing was to be expected of municipal competition.¹ The result was that in February the Postmaster-General made an agreement² with the company, extending over its entire system the terms of regulation and purchase which were laid down for the London area by the agreement of November 18, 1901.³ This arrangement seems equitable both to the company and to the tax-payers.⁴ The former will receive in 1911 the equivalent of its capital investment; the latter, a going concern at cost price. If the agreement were not made, the Post-office would be obliged in 1911 either to buy out the company at its own terms or to build in its stead a superfluous plant.⁵

In Parliament the agreement met with general favor as a final settlement of the telephone tangle. A Select Committee reported in its favor.⁶ Even the advocates of municipal competition offered little objection, altho the Postmaster-General announced that he should grant no more licenses to municipalities.⁷ John Burns went so far in his indorsement of the settlement as to suggest the immediate purchase of the municipal plants by the central government.⁸ His chief anxiety was concerning the treatment of the employees of the National after

¹ Hansard, speech of Lord Stanley, August 9, 1905.

² Memorandum of the P.M.G., dated February 14, 1905, setting forth an agreement dated February 2, 1905, between the P.M.G. and the National Telephone Company.

³ See ante, p. 129.

⁴ *Economist*, February 18, 1905.

⁵ *Ibid.*, August 5, 1905.

⁶ *Ibid.*

⁷ Hansard, debate in House of Commons on August 9, 1905.

⁸ *Ibid.*, speech of John Burns, August 9, 1905.

the transfer of its system to the State. The Postmaster-General promised to take into the service of the Post-office all employees paid less than £700 per annum who should have been in the employ of the National Telephone Company for at least two years prior to December 31, 1911.¹ He also made liberal provision for pensioning employees on retirement, and assured them that they should not receive lower salaries from the Post-office than from the Company.² Mr. Burns then had not the least doubt that, "by bringing to an end the sad muddle of the last twelve years in telephone affairs, industry and commerce would be improved and 12,000 loyal and devoted servants added to the service of the State."³

At last the telephone problem was solved. Once more the Postmaster-General has full control of that branch of his telegraph monopoly. "No one who had followed the telephone development [of Great Britain] could escape the conviction that a great mistake was made when the telephones were first invented and the system was first introduced. Through many weary years their principal object had been to escape from the situation so created, and once again to secure for the Postmaster-General, and through him for the country, a free hand in the matter of telephone development in the United Kingdom."⁴ One question still remained,—What was to be the disposition of the municipal exchanges which were licensed to be operated after 1911? This question now seems unlikely to cause difficulty. In July of the present year the Glasgow municipal telephone system was sold to the British Post-office.

¹ Hansard, Memorandum of P.M.G., read in House of Commons August 9, 1905.

² *Ibid.*, speech of Lord Stanley, August 9, 1905.

³ *Ibid.*, speech of John Burns, August 9, 1905.

⁴ *Ibid.*, speech of Austen Chamberlain, August 9, 1905.

The telephone in Great Britain will after 1911 become in fact, what it has for a quarter-century been in law, a part of the telegraph monopoly. Before speculating upon the future, let us glance back over the past. We recall the comment of the *Economist* in 1880: "It will depend upon the promptitude and energy with which this [the telephone] and similar improvements are made generally available whether the ultimate verdict upon the telegraph monopoly will be that it has justified its existence, or that, as a barrier to progress, it ought to be abolished." Are we ready for the ultimate verdict? Granting that the telephone in Great Britain is not as generally available as it should be, must we now conclude that, in the light of the experience of the past twenty-five years, the telegraph monopoly has not justified its existence, that it has been a barrier to progress?

I think not. The management of an industry in the most progressive manner is, perhaps, the point at which State enterprise, even when it commands the talents of capable administrators, guided by the best intentions, and supported by an honest and efficient civil service, is most likely to fail. The story of the British telephone episode on its face appears to illustrate this weakness of the policy of government ownership. Yet it should be borne in mind that the government was not perfectly free to meet the situation which confronted it in 1880. The telegraph had been acquired at a bad bargain, and became a financial incubus that greatly hampered the government in its treatment of the new invention. Moreover, it happened that the Postmaster-General of the day was an economist of the old school, with a strong bias towards free competition that made him more reluctant to adhere rigidly to the policy of a State monopoly of the means of communication than those of his contemporaries who were responsible for that policy or any of his suc-

cessors from the next generation would have been. Experience has shown that the government made a mistake in declining to do in 1880 what the course of events at last forced it to do in 1905. But that mistake is not conclusive as to the question at issue. Unfortunately, however, it caused a long postponement of the day when the policy of government management might be given a thorough trial. It was not until the settlement of 1905 that the State was again in a situation to bear the whole responsibility for the development of the telephone in the British Isles. It is still too early to render the ultimate verdict.

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